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Evaluation is quantitative or qualitative, the criteria determined by or given to the student. The criteria show how close he has come to the program's objectives and the ranking of individual performance. Vocational education programs susceptible to evaluation are listed and relevant evaluative techniques discussed. Graduate interviews concerning job, school, or other plans, can relate the question closely to the program. Career follow-up studies, going beyond mere placement to identifiable changes in the trainee's work life, can reveal a program's success or failure. Seven basic achievement tests (Ohio Trade and Industrial Supervisors Workshop 1958), on different trades, are simple but useful tools. Official licensing exams are less so, for they assess the student's total education, not a specific program. Industry advisory committees, properly interested in successful programs, are quick to recommend improvements. A systems approach requires breaking goals into analyzable units, to aid both definition and solution of problems. Geared specifically to student vocational needs, accreditation helps maintain program standards. Self-initiated evaluation is most pertinent to local program study. Changes in the trainee's self-image and motivation demonstrate a program's effectiveness. Evaluation criteria apply to structure, process, or product; on-going evaluation allows quick adjustment of facilities/funds to any program's objectives. [Not available in hard copy because of marginal reproducibility of original.] (HH)

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EVALUATION PROCESSES USED TO ASSESS THE EFFECTIVENESS OF VOCATIONAL-TECHNICAL PROGRAMS

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BY

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CHAPTER I

OVERVIEW EVALUATION

"Evaluation is defined as the making of judgments about the value, for some purpose of edeas, works, solutions, methods, materials, etc. It involves the use of criteria as well as standards for appraising the extent to which particulars are accurate, effective, economical or satisfying." The judgments may be either quantitative or qualitative, and the criteria may be either those determined by the student or those which are given to him."[1]

"A measure of educational achievement provides two kinds of information: The first is the degree to which the student has attained the educational objectives...The second is the relative ordering of individuals with respect to their performance."[2]

The two previous items define evaluation and describe what is sometimes measured in such an evaluation. Much has been written relating to the evaluation of the pupil, the programs, and the processes. Little has been written or done in the field of vocational-technical education. Jerome Moss, Jr.,[3] in a recently published document from the University of Minnesota, September, 1968, comments concerning the importance of program evaluation in vocational-technical education:

> In light of its importance, how can the fact be explained that program evaluation in vocational, technical, and practical arts education has been an incidental, casual, and sporadic activity? As a matter

of fact, why have relatively few evaluative studies been conducted since the passage of the Vocational Education Act of 1963?

There are philosophical-political reasons. We are faced with critical manpower and social problems. The public policy decision has been to divert most available human and financial resources from both research and evaluation into the most visible approaches that can at least sustain the illusion of progress. With most public agencies under pressure to produce immediate results, it is no wonder that the need for a good show often overwhelms scientific objectivity; it is not surprising that there is little time to revise, throw out, and frankly compare. Careers are often at stake. Further, it is somehow un-American to be indefinite and doubtful, or to adopt a try-and-see attitude about any proposed public program. Legislators are loathe to provide large sums of money to try out several alternative solutions; we pick one "solution" and go. Obviously, evaluation is done hesitantly, with very grave consequences usually associated with unfavorable findings. "When ideas that are promising as objects of research and honest experimentation [are accepted prematurely and] give birth, through artificial dissemination, to a brood of hysterical fads, there is the danger that angry reaction will dump out the egg with the shell" (Oettinger, 1968, p. 76-77).

There are personnel reasons for the relative inactivity. Vocational, technical and practical arts education has been handicapped by a shortage of well-trained researchers, and evaluation has not been looked upon (mistakenly from my perspective) as a specially rewarding, creative form of research.

Finally, there have been (and still are) technical difficulties. The remainder of this paper will touch on some of these problems so they will not be enumerated here. Suffice it to say for the moment that evaluation is a highly complex, technically and conceptually demanding activity. Until relatively recently, we lacked the statistical and computational tools necessary to do a reasonable job.

From now on, however, the picture must change. The Advisory Council on Vocational Education has demanded greater efforts at evaluation. Social scientists from a wide variety of disciplines are turning their attention to the assessment of various

> systems of manpower training. Our social obligation for evaluation is being assumed by others, and the results could determine our very existence. We must evaluate our own programs using appropriate criteria and methodology so that decisions concerning our future can be based upon data which properly reflects our educational perspectives.

He further suggests that first, evaluation must be comparative because evaluation involves making a judgment and second, differences in the outcomes compared must be attributed to program characteristics or the interaction of program and student characteristics.

It becomes necessary, whenever the problem of evaluation is broached, to have an awareness of what it is that needs to be evaluated. Harold Starr[4] of Ohio State suggests the following as program goals that could be the subject of evaluation if it were desirous to evaluate a program of vocational-technical education:

1. To provide vocational-technical education and training to youth and adults who will be entering the labor force and to those who seek to upgrade their occupational competencies or learn new skills.

2. To provide comprehensive curricula which relate general and vocational-technical education offerings to the vocational objectives of students.

3. To provide increased accessibility to programs of vocational-technical education to meet the needs of those to be served.

4. To provide quality instructional programs which meet the vocational aspirations of people while being compatible with employment opportunities

5. To provide a systematic and continuous evaluation of vocational-technical education in terms of national and state interests, student benefit, and manpower requirements as a means for making decisions concerning alternative investments of human and economic resources and the redirection of program objectives.

There seems to be little question in the minds of concerned vocational educators at local, state and national levels that evaluation of vocational-technical education is a "must" because of the level of federal involvement that is developing. Educators find that what they thought in the past was adequate reporting on successes (and failures occasionally) has proved to be too little, too late in many instances, and despite commitment at the highest levels, vocational education has been the subject of continuous heated and at times even bitter debate. This debate centers on issues such as usefulness or adequacy of vocational education. Do graduates really use the training they receive in school? How effective is this training? Does it really prepare for the types of jobs young people obtain on graduation? Should training be conducted in comprehensive or separate vocational high schools? Another issue often raised concerns the image of vocational education which is seen by some observers as appropriate only for those students who cannot succeed in the more demanding academic curriculum. Another point which is being emphasized tiday is the role of vocational education as it relates to minority groups and others from disadvantaged backgrounds. We need to regard the elevation of entry skill levels as a focal point for some of our less able students.

CHAPTER II.

EVALUATION TECHNIQUES

How does the average teacher of any vocational-technical class evaluate his students? Generally, it is done with teacher-made tests which have dubious value except to regurgitate those phases of a program that have been emphasized enough to establish a basis for recall. True, there are some standardized tests in academic subjects but rarely are these adapted to vocational-technical education. Tests in math are a good example.

How does the average instructor evaluate his program in total? The current concept is that he either doesn't or he bases his evaluation on test scores of his successful students, or placement (not retention) of jobs his students have. The literature points an accusing finger at vocational education for lack of evaluation of the kind that is descriptive and definitive of what is actually happening in the vocational-technical program. Jerome Moss, Jr.[3] places the onus squarely on the shoulders of vocational-technical educators.

The following are some evaluation techniques that have been described in recent research:

1. Graduate interviews: This is a process whereby all graduates of a school are interviewed as to job plans, school plans, military or marriage plans before they leave school. This is a tructured interview technique so the data can be catalogued and related to programs. The point of interest here is the ratio of job to school, etc., plans of the vocational

student as opposed to the general or academic graduate. It has been contended in the past that the vocational graduage has a much better job concept formulated than the general or academic graduate. This interview process is counselor oriented and very costly.[5]

2. Career follow-up study: One of the most commonly used techniques, career follow-up study probably produces the greatest quantity of data today. Some of the relevance of the data is under heavy fire, but this type of study seemed to be the easiest to use to establish (erroneously or not) that vocational-technical programs were in fact producing a useable product (students placed in jobs).

Some of the items evaluated were:

a. Relatedness of first job to trade student
b. Assessment of skill origins and requisites
c. Past high school, occupational history
d. Off-the-job interests and affiliations
e. Leisure activities
f. Organization affiliations

Sharp and Krasnegor[7] comment concerning follow studies of the more common descriptive variety, "...studies can be good or bad, valid or invalid and yield new insights or document the obvious."

Sharp further commented that the more complex studies of follow-up were offering hopeful signs that the narrow and self-conscious "placement" criteria were being replaced with more sophisticated evaluation devices which take a wider view of employment outcomes and attempt to relate specific training approaches to identifiable changes in the trainee's work life.[8]

Eninger stated in a recent study related to follow-up techniques, "If the graduate's first job is not in the trade studied or highly related, the chances are high that he will never enter the trade or a highly related trade."[6] It can be suggested that at best placement data from follow-up gives the school administrator speedy and inexpensive feedback high-lighting the extremes of program success and failure. An aspect of this relates to the disproportionate number of students recruited for vocational education from disadvantaged or low-achieving groups and then trying to establish a statistical inference related to general education dropouts or job success of other kinds of students.

3. Achievement testing: Harry Davis[9] states that the process of learning in vocational-technical education is no different from any other instructional area. He assumes, therefore to test the behavioral changes that occur with standardized instruments designed by the Ohio Trade and Industrial Supervisors Workshop of 1958. These tests have been used in eight states. There are seven basic achievement tests in the series, each related to a different trade field. The development methods do not appear as careful and sophisticated as the major test developers might use, but the tests could be considered as a useful tool.

4. State and national licensing examinations: Here is an interesting technique that works from the ultimate product at a "point of no return." The product of the program (student) is evaluated for licensure after he has passed all the evaluative

devices that the program imposes, much like a doctor or dentist would be licensed but as a sub-professional level. The value of such procedure is questionable as two years plus of education in many respects are being evaluated as a total in one examination. It could be questioned what such exaamination really evaluates at the point at which it is administered.[10]

5. Industry advisory committees: To the true believer in vocational education, the use of the advisory committee as part of a program is a "must." To use it as an assisting device in evaluation makes good sense.[11] The question is raised as to whether or not a local advisory committee would "tend to whitewash" a program it was vitally concerned with, and Mr. Burt comments that it has been his experience to find the reverse. They tend to be vitally interested in having the best possible program as a result of their efforts. They will in effect criticize its weakness and recommend change.

6. The systems approach cycle: The computer has changed concepts of evaluation to the extent that models are being developed on a systems analysis approach. This allows programs to be broken down into digestable segments which can be dealt with on a system flow basis. As the programs are disassembled into flow units, objectives have to be analyzed into units that permit study. Two major areas of problem definition and problem solving face the evaluator as he establishes a systems approach.[12]

7. Accreditation as an evaluation technique: Accreditation of a school involves the total concept of the school in

all aspects. It was the practice for a time to ignore the vocational-technical aspects of a school's program as not being a part of the process of accreditation because accreditation per se was related to an acceptance function by colleges and universities. This acceptance function has given way to total evaluation from the standpoint of fulfilling the student's needs, the community's participation, etc. All nationally recognized accrediting agencies now follow four functions:[13]

1. They publicly establish the standards by which they will judge quality.
2. They send qualified educators to serve as inspectors on visits.
3. They approve and include on their lists of accredited institutions only those which satisfactorily meet the standards.
4. They revisit and revaluate these institutions periodically and remove from their lists any institution that is not continuing to meet their standards.

From these statements of intent the agencies that do accreditation state that now they do not accredit vocational-technical education separately but as a part of the total institution.

From these points of view has come an expression that "The technical institute that turns out excellent technicians is a quality institution just as the graduate school producing fine scholars at a doctoral level are quality institutions. ...Each institution must be evaluated in terms of the function it proposes to perform."[13]

The Southern Association of Colleges and Schools in a

publication of May, 1967,[14] said in part, "...Vocational schools in particular are in the mainstream of change and should be sensitive to it. Some [educators] fear that accreditation would lessen this sensitivity, bring rigidity and create conflict between the needs of business and industry on the one hand, and the standards of the accrediting association on the other."

8. Self initiated evaluation: This technique has, built in, a number of elements that relate to local program study:

a. Selection of competent leadership

b. Involvement of faculty in the evaluation process

c. A focus on the output of programs

d. Identification of real objectives of the total program

e. Use appropriate methods of data gathering

f. Study the essential elements of programs

g. Involving citizen groups

Several other major points Byram[15] emphasizes are development of faculty understanding of the evaluation because of the threatened feeling many faculties have whenever evaluation is mentioned. Some of this threatened feeling comes from unhappy previous experiences. They need to be assured that program evaluation is not teacher evaluation. Michigan State has developed an instrument called the "Vocational Education Understandings Inventory," which was designed to alleviate areas of misunderstanding and threat to teachers. Another point is the care that should be used in determining expected outcomes based purely on societal or local needs. Eninger states, "Schools are for people and are not to be thought of as tools of the labor force or the economy."[6]

9. Personality change as a result of occupational education and evaluation: Joseph Champagne[16] states, "The position I adhere to is that occupational education must give focus to educating the entire man...so that the individual appreciates the dignity of his worth. ...The individual needs to be educated to function with a newly acquired skill rather than to be merely trained in a skill." He further states, "There is a noticeable lack of discussion of techniques of attitude assessment specifically in occupational education." He alludes to the extensive efforts related to adult education orientation to develop sound attitudes toward reception of training, but the general ignoring of this same phase of pre-training in our high schools. He suggests this process could be conceptualized as achievement motivation which needs to be aroused and nurtured with some self-perpetuating force that carries the student through as much of his work life as possible.

10. Evaluative criteria: Ralph Tyler in a recent article[17] listed three kinds of evaluation criteria that may be used to judge schools and programs.

a. Structure - Facilities, plant and equipment

b. Process - The way in which the school carries on

c. Product - Ultimate evaluation--how far does the school carry out what it tries to accomplish

The National Study of Secondary School Evaluation suggests that areas of program and schools be evaluated in terms of its objectives and related to how the reaching of those objectives

fills the needs of its students.

Many other criteria could be formulated that could be related to the specifics of course content and objectives as well as to an entire program or school philosophy.

CHAPTER III

CONCLUSIONS

It becomes obvious from the literature that the problem of evaluating vocational-technical education to determine its effectiveness, content, and future is moving forward with ever increasing speed. Conferences such as the Upjon Conference in Atlantic City on October 6-9, 1968, are but indicators on the horizon of what is to come. Evaluation is to be the keystone of future programs and it is felt and could safely be predicted that future programs will of necessity have built-in evaluation programs and techniques that will provide a continuing fund of data as the program evolves.

The legislatures, boards and the congress are no longer content to wait ten years or more before educators decide to find out if the programs are in fact doing what was claimed for them at the outset. There are warning signs along the way that education must need or it will find outside sources will be brought in to do what education has failed to do for itself.

There are some pluses too for the educator and programs. As it can be established that programs are or are not functioning as a result of immediate evaluation, adjustments can be made which will make the utilization of facilities and funds as economical as possible. This will provide for a dynamic attitude development within education as educators recognize the merits of real flexibility within their institutions.

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